Job Title: 4 Postdoctoral scientist positions: GHG/AQ emissions modeling, data science, and analysis at multiple scales

School of Informatics, Computing and Cyber Systems
Northern Arizona University
Flagstaff, Arizona

Join an exciting Northern Arizona University research team (https://gurneylab.nau.edu/) in beautiful Flagstaff, Arizona doing cutting-edge research on quantifying GHG and local air pollution emissions at multiple scales from the building to the globe. This research uses existing systems (Vulcan - https://vulcan.rc.nau.edu/ and Hestia – https://hestia.rc.nau.edu) developed in the Gurney Lab over the past 20 years. These postdoctoral positions will perform research at the cutting edge of high-resolution estimation of GHG/AQ emissions and their use within both atmospheric modeling algorithms, applications in urban science, and decision-support and policymaking at multiple scales. The positions intersect the disciplines of carbon cycle science, civil engineering, spatial analysis, air pollution emissions/chemistry, informatics, and GHG emissions accounting. The four positions can be broadly categorized as follows:

1) Integration of US nationally-regulated air pollutants (local AQ species) into the existing Vulcan emissions modeling platform. Go here to apply, job number 606569
2) Development of an advanced treatment of "Scope 2" emissions involving US electricity supply/demand modeling and GHG/AQ emissions. Go here to apply, job number 606564
3) Building-scale emissions modeling of GHG/AQ/heat within urban domains (see below for application procedure)
4) Use of remote sensing and machine learning to quantify GHG/AQ emissions (see below for application procedure)

Candidates must have received a PhD in a field related to the positions (spanning Informatics, Civil Engineering, Ecological/Environmental Sciences, Data Science, Geography) from an accredited college or university. The applicant will be expected to publish peer-reviewed journal articles and work in a team environment, effectively communicating with a range of physical and social scientists.

Necessary skills: Experience with numerical modeling, knowledge of GHG/pollution reporting/quantification and analysis, geospatial statistics, strong numerical analysis abilities, R/python programming, experience with GIS (open source preferred) experience with large volume data environments and related coding.

Desired skills: knowledge and experience working with the US National Emissions Inventory (or equivalent), carbon accounting/footprinting experience, large code base development, building thermodynamic modeling, US electricity grid modeling.

Given the multidisciplinary nature of the research, a highly self-directed, creative and self-motivated individual is sought. These positions are fulltime appointments with an anticipated start date between 2/1/2023 and 8/1/2023. The appointments will be made initially for one year with possibility of extension for additional years. Current finding includes a 5-year time horizon. Salary range is $60,000-$75,000 dependent on experience, with associated University benefits.

Official application portal to positions 3) and 4) has not yet opened, but initial review and screening can be achieved by sending a cover letter describing your research experience and interests and a curriculum vita to: Prof. Kevin Gurney, kevin.gurney@nau.edu.

The initial closing date for receipt of applications is 1/1/2023; but applications will be reviewed on an ongoing basis until a suitable candidate is hired.

A background check is required for employment. Northern Arizona University is an equal opportunity/affirmative action employer committed to excellence through diversity. Women and minorities are encouraged to apply.

Gurneylab: We are a research group working on air emissions (GHG and local) quantification in cutting-edge detail aimed at both scientific and policy challenges. Our day-to-day involves data science, numerical modeling, many forms of numerical analysis, all driven by solving problems in climate change science/policy and urbanization science (and many other topical filaments!). We are a diverse, social group housed in the modern informatics building on the beautiful Flagstaff campus.

NAU/Flagstaff: NAU is located in Flagstaff, Arizona - a beautiful mountain town of ~75,000 at 7000' on the heavily forested Colorado plateau at the foot of the San Francisco Peaks (12,500'). A 4 season climate with downhill skiing/snowboarding in Winter and hiking, mountain biking in the summer. We are 75 minutes from the Grand Canyon, 2 hours from Lake Powell/Colorado River, and 45 minutes from Sedona. We have a growing international community with great restaurants, numerous microbreweries, Lowell Observatory, and a laid-back mountain lifestyle.